

WHAT IS CLAIMED IS:

1. A jasmonic acid carboxyl methyltransferase JMT having an amino acid sequence represented by Sequence ID No. 3.
- 5 2. A cDNA gene encoding jasmonic acid carboxyl methyltransferase as defined in claim 1.
3. The cDNA gene according to claim 2, which contains an amino acid sequence represented by Sequence ID No. 1.
- 10 4. The cDNA gene *JMT* according to claim 3, which contains an amino acid sequence represented by Sequence ID No. 2 (Accession No. KCTC 0794BP).
- 15 5. A recombinant vector for plant transformation, which contains the cDNA gene for jasmonic acid carboxyl methyltransferase as, defined in claim 2.
6. The recombinant vector pCaJMT for plant transformation according to claim 5, which contains a cDNA gene having a nucleotide sequence represented by Sequence ID No. 1.
- 20 7. A transgenic plant, which is transformed with the recombinant vector for plant transformation as defined in claim 5 and has an enhanced resistance against damages caused by phytopathogens and harmful insects and stresses.
- 25 8. A method for enhancing a resistance of plant against damages caused by phytopathogens and harmful insects and stresses, which comprises transforming the plant with a recombinant vector for plant transformation which contains a gene encoding jasmonic acid carboxyl methyltransferase.
- 30 9. The method according to claim 8, wherein the gene encoding jasmonic acid

carboxyl methyltransferase is the gene as defined in claim 2.

10. The method according to claim 9, wherein the gene encoding jasmonic acid carboxyl methyltransferase is the gene as defined in claim 3 or 4.

5

11. The method according to claim 8, wherein the damages caused by phytopathogens and harmful insects are fungal diseases, bacterial diseases, viral diseases or damages due to harmful insects.

10 12. The method according to claim 11, wherein the damages caused by phytopathogens and harmful insects are blast, bacterial leaf blight, false smut and leafhopper in rice plant; scab in barley; brown spot in maize; mosaic disease in bean plant; mosaic disease in potato; late blight and anthracnose in red pepper; soft rot, root-knot disease and cabbage butterfly in Chinese cabbage and radish; bacterial
15 blight in sesame; gray mold rot and wilt disease in strawberry; *Fusarium* wilt in watermelon; bacterial wilt in tomato; powdery mildew and downy mildew in cucumber; tobacco mosaic in tobacco; *Fusarium* wilt in tomato; root rot in ginseng; angular leaf spot in cotton plant; anthracnose and gray mold rot in fruit trees including apples, pears, peaches, kiwi fruit, grape and citrus; canker in apple; witches' broom in
20 jujube tree; powdery mildew and rust in forage crops including ryegrass, red clover, orchard grass, alfalfa, etc.; gray mold rot and wilt disease in flowering plants including rose, gerbera, carnation, etc.; black spot in rose; mosaic disease in gladiolus and orchids; or stem rot in lily.

25 13. The method according to claim 8, wherein the plant to be transformed is selected from the group consisting of food crops, vegetable crops, crops for a special use, fruit trees, flowering plants and forage crops.

30 14. The method according to claim 13, wherein the food crop is selected from the group consisting of rice plant, wheat, barley, maize, potato, red-bean, oats and African millet; the vegetable crop is selected from the group consisting of *Arabidopsis*,

Chinese cabbage, radish, red pepper, strawberry, tomato, watermelon, cucumber, cabbage, melon, pumpkin, green onion, onion and carrot; the crop for a special use is selected from the group consisting of ginseng, tobacco, cotton plant, sesame, sugar cane, sugar beet, green perilla, peanut and rape; the fruit tree is selected from the
5 group consisting of apple tree, pear tree, jujube tree, peach tree, kiwi fruit, grape, citrus, persimmon tree, plum, apricot and banana; the flowering plant is selected from the group consisting of rose, gladiolus, gerbera, carnation, chrysanthemum, lily and tulip; and the forage crop is selected from the group consisting of ryegrass, red clover, orchard grass, alfalfa, tall fescue and perennial ryegrass.

10

15. The method according to claim 8, wherein the resistance against stresses is a drought resistance, a salt resistance and a cold resistance.